In the Claims:

The below listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) a recombinant gene encoding a heterologous orphan ~~cell surface~~G protein-coupled receptor ~~whose~~wherein said receptor is expressed on the cell membrane of said cell such that signal transduction activity is modulated by interaction with an extracellular signal; and

(ii) a recombinant gene encoding a heterologous test polypeptide, ~~which is capable of being tested to determine if it reacts with said orphan cell surface receptor,~~ wherein the test polypeptide is transported to a location allowing interaction with the receptor expressed on the cell membrane,

wherein collectively the mixture of cells expresses a ~~variegated population~~library of said test polypeptides, and modulation of the signal transduction activity of the ~~orphan cell surface~~ receptor by ~~one of said~~ a heterologous test polypeptides within the library ~~that reacts with said orphan cell surface receptor will~~ provides a detectable signal.

2. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) a heterologous orphan ~~cell surface~~G protein-coupled receptor ~~whose~~wherein said receptor is expressed on the cell membrane of said cell such that signal transduction activity is modulated by interaction with an extracellular signal;

(ii) a recombinant gene encoding a heterologous test polypeptide, ~~which is capable of being tested to determine if it reacts with said orphan cell surface~~ receptor, wherein the test polypeptide is transported to a location allowing interaction with the receptor expressed on the cell membrane; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity of the ~~orphan cell surface~~ receptor,

wherein collectively the mixture of cells expresses a ~~variegated population~~library of test polypeptides.

3-4. **(Cancelled)**

5. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) an orphan ~~cell surface~~G protein-coupled receptor ~~whose~~wherein said receptor is expressed on the cell membrane of said cell such that signal transduction activity is modulated by interaction with an extracellular signal;

(ii) a recombinant gene encoding a heterologous test polypeptide~~, which is capable of being tested to determine if it reacts with said orphan cell surface receptor,~~ and include~~s~~ing a signal sequence for secretion, wherein the test polypeptide is transported to a location allowing interaction with the receptor expressed on the cell membrane; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity of the ~~orphan cell surface~~ receptor,

wherein collectively the mixture of cells expresses a ~~variegated population~~library of test polypeptides.

6-7. **(Cancelled)**

8. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) an orphan ~~cell surface~~G protein-coupled receptor ~~whose~~wherein said receptor is expressed on the cell membrane of said cell such that signal transduction activity is modulated by interaction with an extracellular signal; and

(ii) a recombinant gene encoding a heterologous test polypeptide and including a signal sequence for secretion~~, which is capable of being tested to determine if it reacts with said orphan cell surface receptor~~, wherein the test polypeptide is transported to a location allowing interaction with the receptor expressed on the cell membrane,

wherein collectively the mixture of cells expresses a ~~variegated population~~library of test polypeptides, and modulation of the signal transduction activity of the ~~orphan cell surface~~ receptor by a test polypeptide within the library provides a detectable signal.

9. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 8, wherein each cell further comprises a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity of the ~~orphan cell surface~~ receptor, expression of the reporter gene providing the detectable signal.

10. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 8, wherein the reporter gene encodes a gene product that gives rise to a fluorescence detectable signal.

11. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 9, wherein the reporter gene encodes a beta-galactosidase gene product.

12-16. **(Cancelled)**

17. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 8, wherein each cell further comprises a heterologous gene construct encoding the receptor.

18-24. **(Cancelled)**

25. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 8, wherein the variegated population of test polypeptides includes at least 10^3 different test polypeptides.

26. **(Currently Amended)** A recombinant yeast cell, comprising:

(i) a recombinant gene encoding a heterologous ~~cell surface~~G protein-coupled receptor protein ~~whose~~wherein said receptor is expressed on the cell membrane of said cell such that signal transduction activity is modulated by an extracellular signal;

(ii) a recombinant gene encoding a heterologous test polypeptide, wherein the test polypeptide is transported to a location allowing interaction with the receptor expressed on the cell membrane; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity of the ~~orphan cell surface~~ receptor.

27. **(Previously Presented)** The recombinant cell of claim 26, wherein the reporter gene encodes a fluorescence gene product that gives rise to a fluorescence detectable signal.

28-35. **(Cancelled)**

36. **(Previously Presented)** The recombinant cell of claim 26, which yeast cell is a *Saccharomyces* cell.

37. **(Previously Presented)** The recombinant cell of claim 26, which yeast cell is a *Schizosaccharomyces* cell.

38. **(Cancelled)**

39. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) a recombinant gene encoding a heterologous orphan ~~cell-surface~~G protein-coupled receptor ~~whose~~wherein said receptor is expressed on the cell membrane of said cell such that signal transduction activity is modulated by interaction with an extracellular signal;

(ii) a recombinant gene encoding a heterologous test polypeptide and including a signal sequence for secretion, ~~which is capable of being tested to determine if it reacts with said orphan cell surface receptor,~~ wherein the test polypeptide is transported to a location allowing interaction with the receptor expressed on the cell membrane ~~and includes a signal sequence for secretion~~; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity of the ~~orphan cell surface~~ receptor,

wherein collectively the mixture of cells expresses a ~~variegated population~~library of test polypeptides.

40-49. **(Cancelled)**

50. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 39, which yeast cell is a *Saccharomyces* cell.

51. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 39, which yeast cell is a *Schizosaccharomyces* cell.

52. **(Cancelled)**

53. **(Currently Amended)** The ~~recombinant cells~~mixture of claim 39, wherein the variegated population of test polypeptides includes at least 10^3 different test polypeptides.

53-76. **(Cancelled)**

77. **(New)** The mixture of any of claims 1, 2, 5, 8 or 39, wherein the G protein-coupled receptor is selected from the group consisting of a chemoattractant peptide receptor, a neuropeptide receptor, a light receptor, a neurotransmitter receptor, a cyclic AMP receptor, and a polypeptide hormone receptor.

78. **(New)** The recombinant yeast cell of claim 26, wherein the G protein-coupled receptor is selected from the group consisting of a chemoattractant peptide receptor, a neuropeptide receptor, a light receptor, a neurotransmitter receptor, a cyclic AMP receptor, and a polypeptide hormone receptor.